

- round head is knuckle.

● Phalanges - long bones in 3 rows.

1) proximal

2) middle

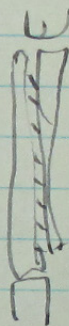
3) distal.

- both metacarpals + phalanges numbered from thumb or lateral side.

Thumb has 2 phalanges. Hand + arm designed for grasping.

Radius + Ulna Compared.

	R.	U.
Side of forearm -	lateral	medial
Upper end -	small	large.
Shaft as it descends -	increases	tapers.
Lower end -	large	small.
Most important artic.	wrist	elbow.



Hip bone

- 2 hip bones make lower limb girdle.
- meet in front - separated behind.
- hip bones + sacrum = pelvis for strength.
- a fusion of 3 elements, separated by cartilage, separate till 25 yr. age.

3 parts - ilium - upper part.

ischium - lower posterior part.

pubis - lower anterior part.

- meet at acetabulum (little vinegar bottle)

- cup for socket of hip joint.

- rest of ilium is upper part of wing.

- inner surface called iliac fossa

- smooth

- outer surface ridged for buttock muscles.

- upper edge called iliac crest.

- starts in front with a bump called anterior superior spine.

- bump at back posterior superior spine.

Sacro-iliac joint - strong joint with axial skeleton.

Pubis - 3 parts. body

 + superior ramus

 + inferior ramus.

- ramus joined at the symphysis.

(bound together)

- upper edge of body is pubic crest.

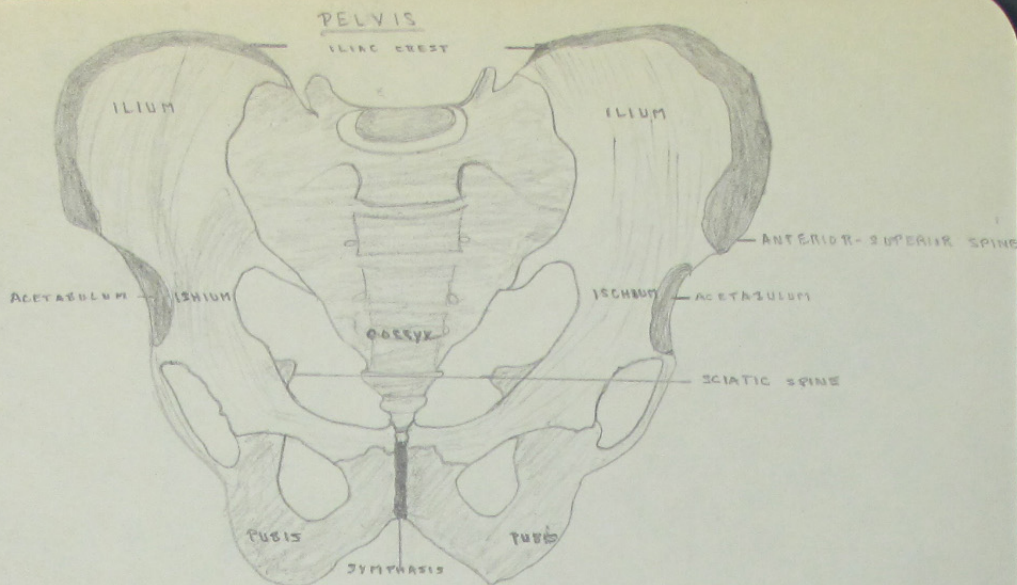
Superior ramus runs to meet ilium.

Inferior ramus runs backward + laterally to meet ischium.

Inferior rami make pubic arch.

Pubis + ischium bound obturator foramen.

Ischium - lower posterior part.



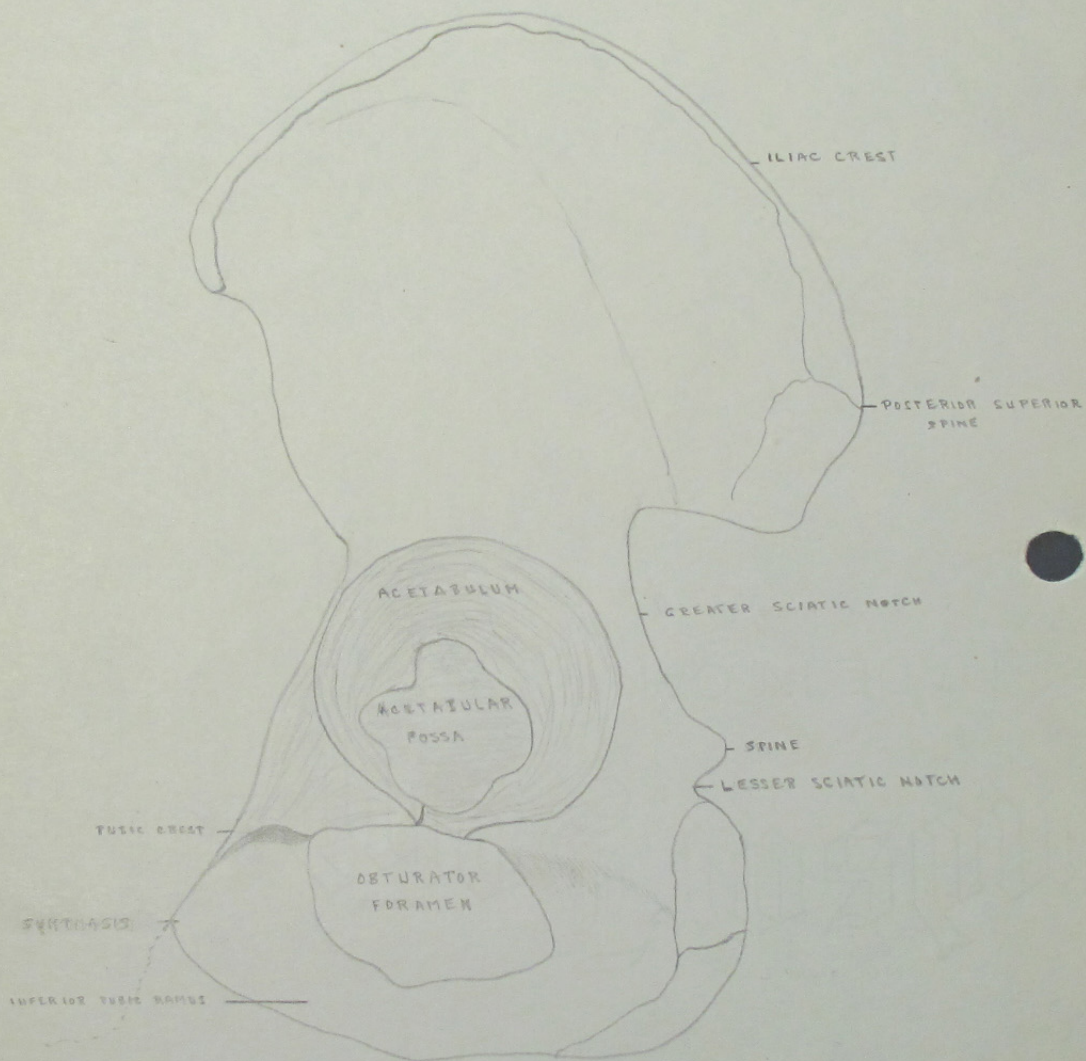
MALE

- Bones heavier + rougher.
- Sacrum narrower: + more curved.
- Ilia less vertical.
- Iliac fossae deeper.
- Great sciatic notch narrower.
- Major pelvis relatively wider.
- Minor pelvis deeper and narrower.
- Capacity of minor pelvis less.
- Superior aperture more heart-shaped.
- Symphysis deeper.
- Sciatic tubercles inflexed.
- Pubic angle narrow + pointed.
- Margins of ischiopubic rami more everted. →

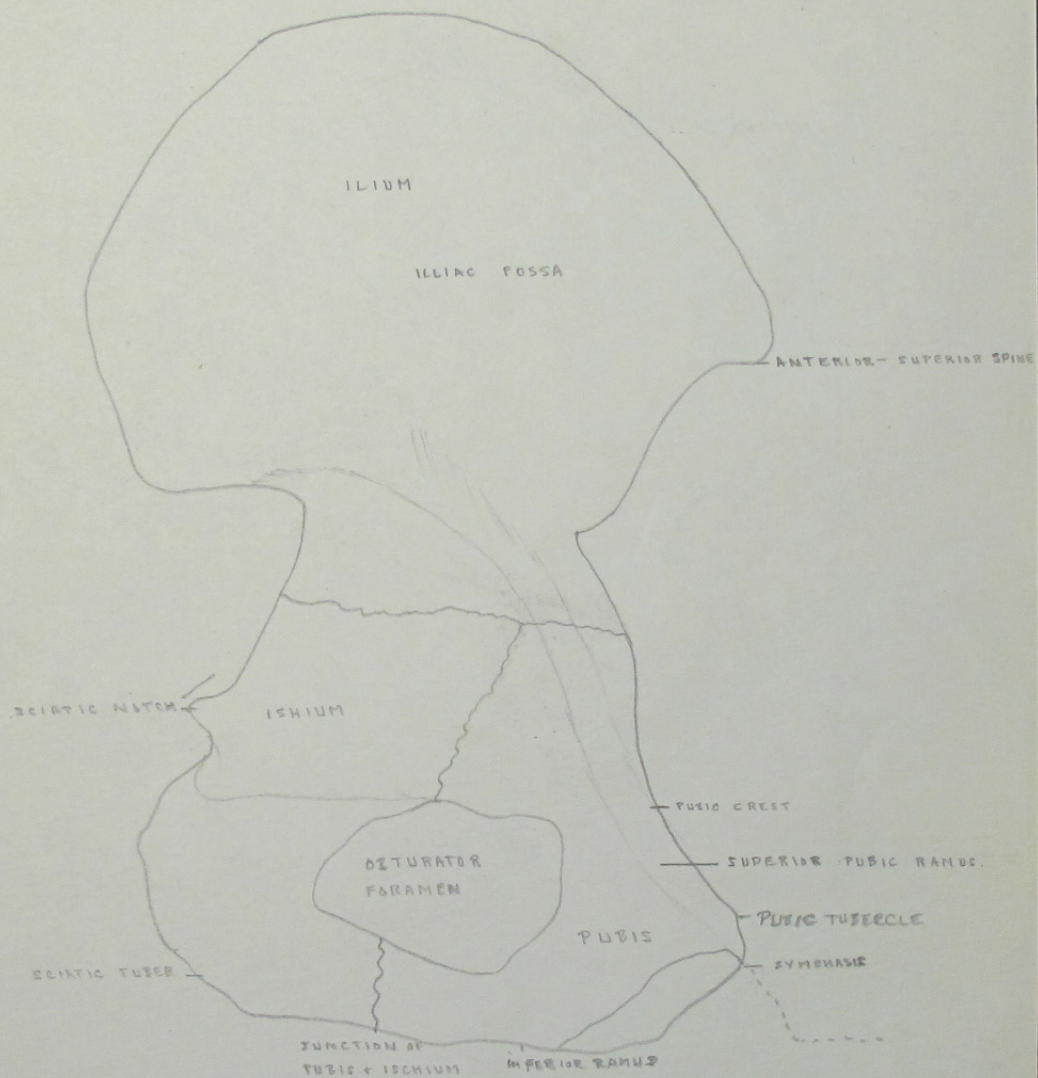
FEMALE

- Bones more slender.
- Sacrum broader: + less curved.
- Ilia more vertical.
- Iliac fossa shallower.
- Great sciatic notch wider.
- Major pelvis relatively narrower.
- Minor pelvis shallower + wider.
- Capacity of minor pelvis greater.
- Superior aperture more oval.
- Symphysis shallower.
- Sciatic tubercles everted.
- Pubic arch wider + more rounded.
- Margins of ischiopubic rami less everted.
- Obturator foramen Δ .
- Obturator foramen oval.

LATERAL VIEW OF LEFT HIP-BONE.



MEDIAL VIEW OF LEFT HIP-BONE



- body in the acetabulum at upper part of body.
- lower part of body is tuberosity, on which we sit.
- back has the spine.
- notch above spine is greater sciatic notch.
- " below " lesser sciatic notch.

Ramus joins tuberosity to inferior pubic ramus.

Use of hip bone - to transfer weight of trunk from sacrum to acetabulum standing up. symphysis

- to tuberosity when sitting down.
- secondary boss between acetabulum + symphysis to complete bony ring of pelvis.

2) to house viscera (internal organs)

Pelvis - hip bones + sacrum + coccyg.

- bony ring.

- false pelvis is ^{upper} iliac fossa.

True pelvis below iliac fossa.

- separated by the brim running for top of sacrum behind to pubic crest in front.

Sex differences P. 479

Male pelvis for strength.

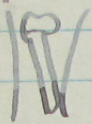
- narrow + deep, narrow long sacrum.

Female for child-bearing.

- capacious, wide pubic angle, L.

wide between acetabulum, sacrum broad.

Femur - thigh bone between hip & knee.
- for strength.
- a long bone, the longest bone & strongest.

Position - oblique. heads separated by distance between acetabula, lower ends in contact at the knee.

- anatomically knock-kneed.
- head $\frac{2}{3}$ of a sphere & fits the acetabulum at a ball & socket joint.
- neck - constriction below the head.
- longer than humerus neck.
- inclines laterally away from head.

2 trochanters - pulleys for muscle attachment.
- caused by the pull of muscles.
- point in direction of the pull.

1) greater trochanter - lateral side at junction of neck & shaft - caused by up-pull of buttock muscles.

2) lesser trochanter - at medial junction of neck & shaft - caused by up-pull of muscle psoas.

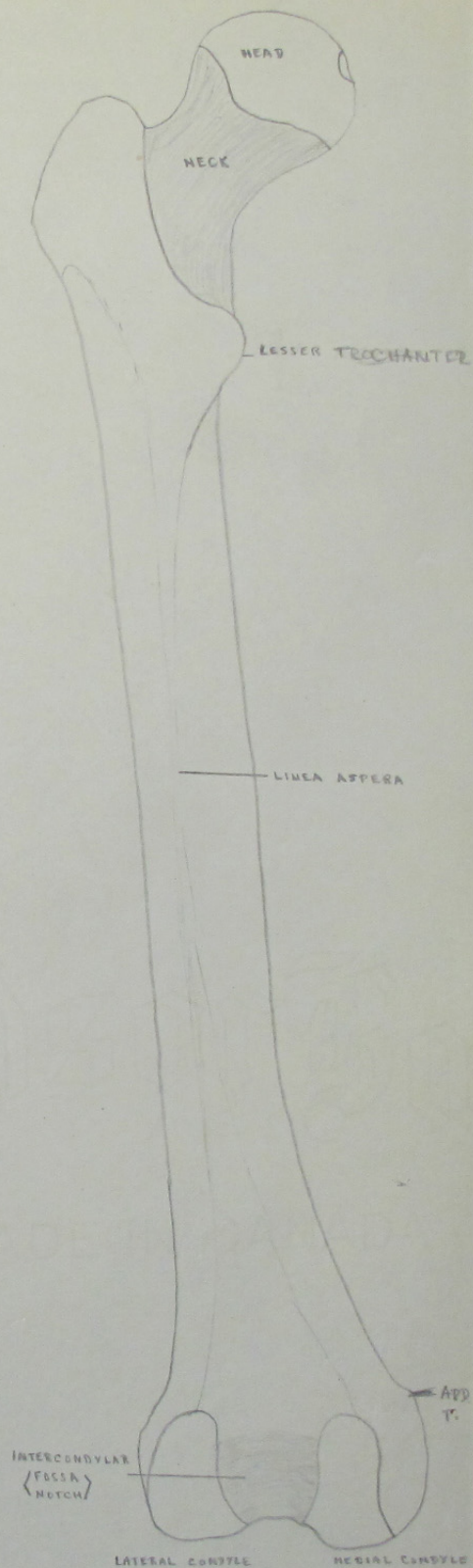
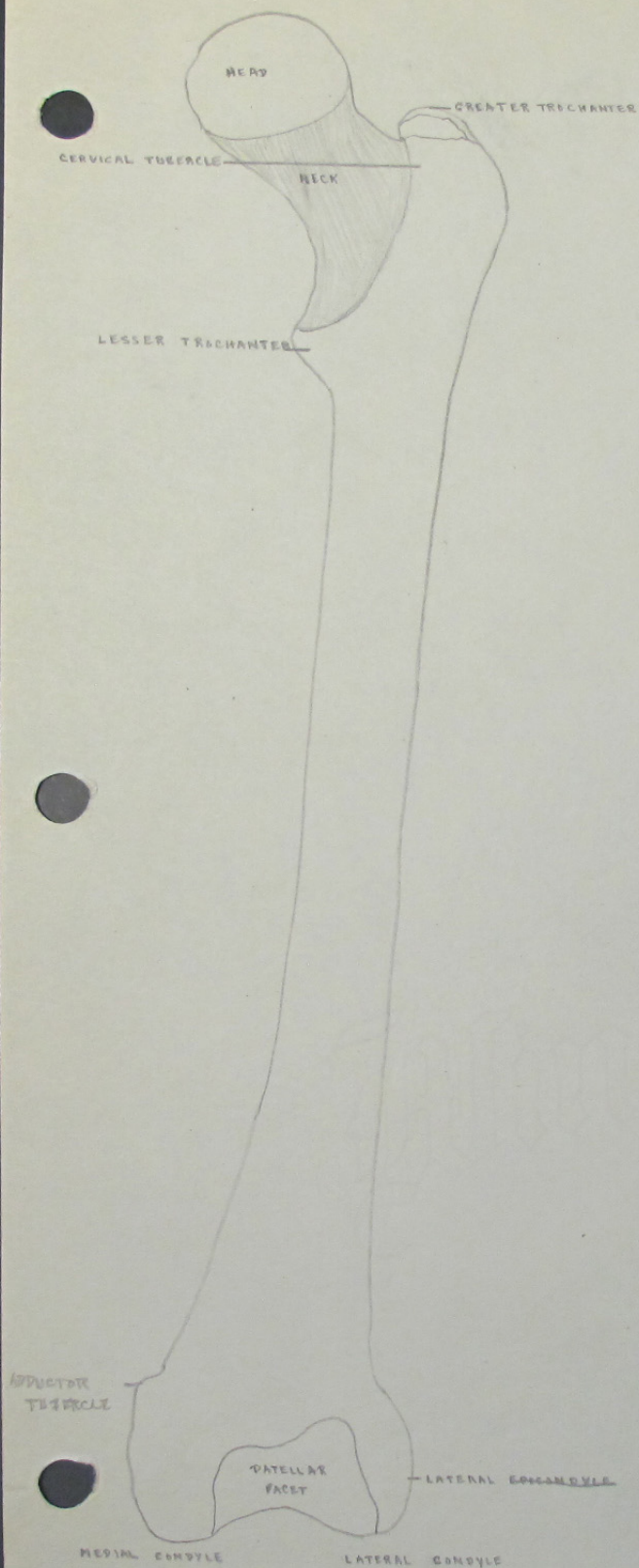
Shaft - upper part cylindrical.
- lower quadrilateral.
- conforms to the ends.
- back has a rough line - linea aspera - for several muscles.

lower end - has 2 big knuckles - condyles.
- medial & lateral - rest on flat top of tibia.
- front of condyles smooth for knee-cap (patella).
- behind condyles separated by deep notch - inter-condylar notch.

LEFT FEMUR

VENTRAL ASPECT

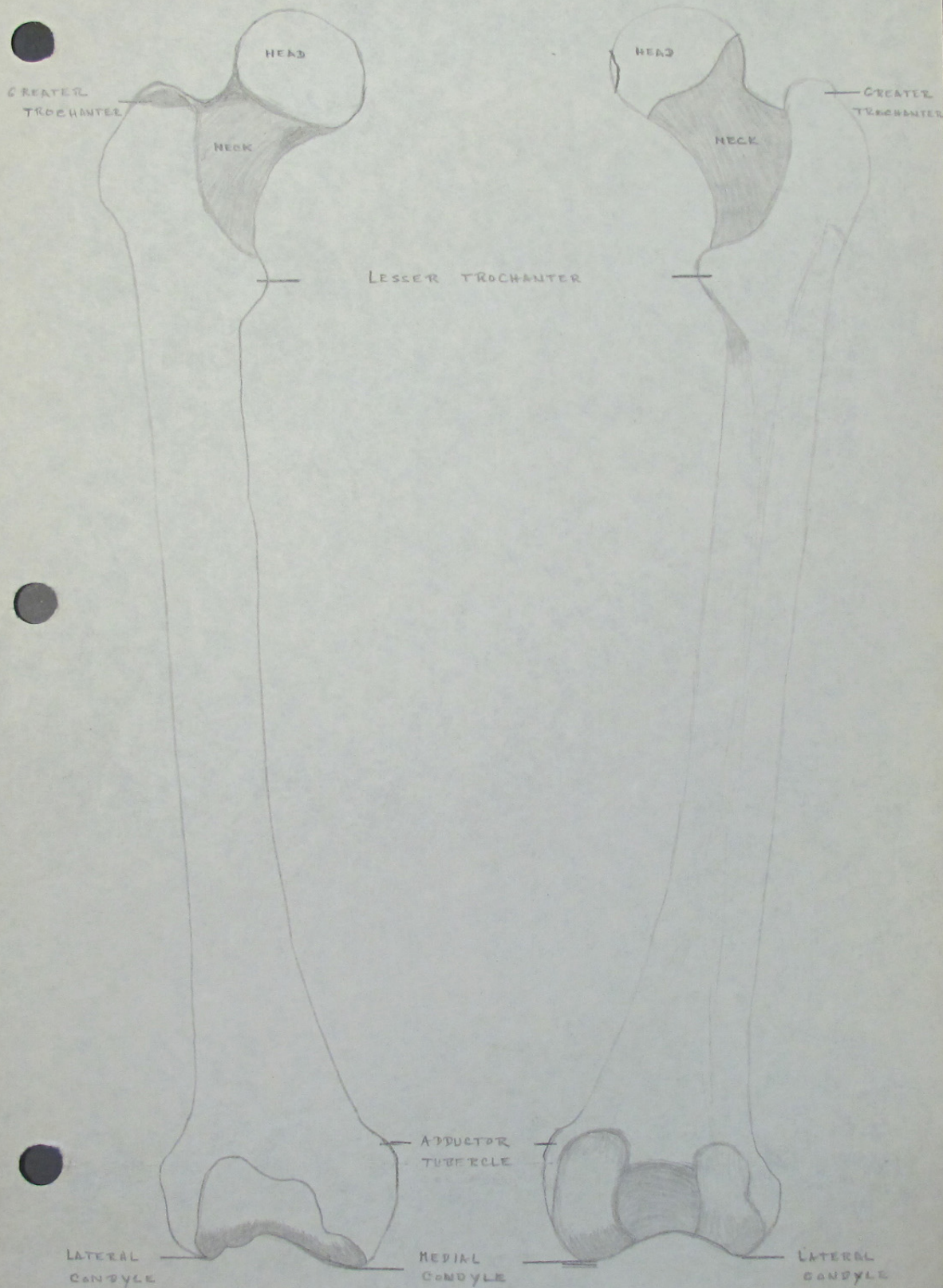
DORSAL ASPECT



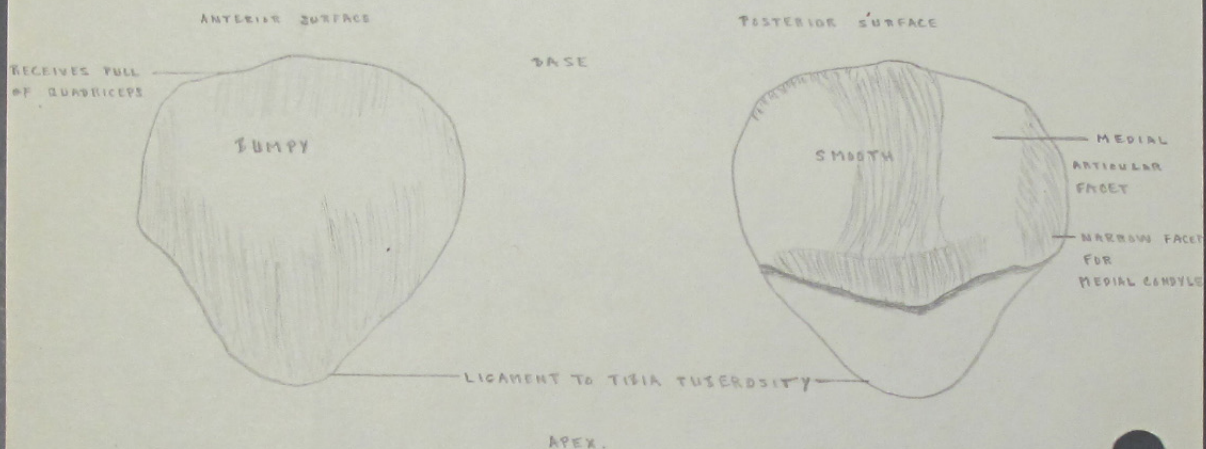
RIGHT FEMUR

VENTRAL ASPECT

DORSAL ASPECT



THE LEFT PATELLA.





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